



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,160	03/11/2004	Stephen Morphet	R&G C-327A	5095
23474	7590	02/07/2005	EXAMINER	
FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1699			SINGH, DALIP K	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,160

Applicant(s)

MORPHET, STEPHEN

Examiner

Dalip K Singh

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/1/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
DEVELOPMENT.

(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer
program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),
and tables having more than 50 pages of text are permitted to be submitted on
compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A

“Sequence Listing” is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required “Sequence Listing” is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 limitation recites in step d “storing the image data and the shading data” without specifying as to where this storage is. Is it to be stored into the display list memory area, main memory or graphics memory? Similarly, claim 1, step i “providing

Art Unit: 2676

the shading data for display”, it is not clear what happens to the image data. Is it discarded and not processed further? Appropriate correction is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim(s) 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,852,443 to Kenworthy.

a. Regarding claim 1, Kenworthy **discloses** subdividing the image into a plurality of rectangular areas (...the image processor divides the gsprites into image regions called “chunks” ...col. 13, lines 43-55...tiler checks the current chunk size to determine how to sub-divide...col. 36, lines 25-67); loading object data for each rectangular area into a display list memory until that memory is substantially full (...processing proceeds until...fragment buffer overflows...col. 4, lines 30-56), the pixel (element 408, Fig. 9A) and fragment buffer(s) (element 410, Fig. 9A) being similar to the display list memory as per the claim 1 limitation, where a check is maintained on the fragment buffers to see if it is substantially full; deriving image data and shading data for each picture element (...the pixel buffer entry includes the following data...where R, G, B...Z components...represents the depth of the pixel...col. 33, lines 67; col. 34, lines 1-17...the fragment buffer is used to store

information about pixel fragments...each entry in the fragment buffer provides color, \square , Z and coverage data associated with the surface...col. 34, lines 24-55...the pixel engine performing the pixel level calculations...col. 33, lines 23-25); storing the image data and the shading data (...the anti-aliasing engine 412 transfers resolved pixel data to the compression engine...sends the compressed data to...for storage in shared memory 216...col. 19, lines 15-30); loading further object data into the display list memory to replace the existing contents (...once all the polygons for the chunk are rendered...the pixel engine writes pixel data for the next chunk in the other pixel buffer and the remaining free location in the fragment buffer...col. 33, lines 51-60); retrieving the stored image data and shading data; deriving additional image data...from the new object data and the previously derived image data and shading data (...the tiler 378 includes a number of components for primitive rendering...the command and memory control 380 includes an interface to shared memory 216...accesses to memory...are arbitrated by this block...col. 17, lines 22-27...the texture cache 402 stores blocks of decompressed image data...the decompression engine 404 decompresses texture data and transfers it to the texture cache 402...col. 18, lines 28-45), although it does not disclose retrieval and deriving of all image data, new or previously derived, all data is stored in the shared memory and passes through the texture cache, and similar to the retrieval and deriving image data as per the claim limitation; repeating and providing the shading data for display is **implicitly implied** (...after completing processing of any remaining sub-chunks, the tiler proceeds to the next chunk. Processing ultimately terminates when there are no further chunks in the

input data stream...col. 37, lines 35-38). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to consider that storage of data in shared memory (element 216, Fig. 4A) and data transfer through the texture cache to be similar to the retrieval and deriving image data as per the claim limitation (col. 11, lines 55-67; col. 12, lines 8-13).

b. Regarding claim 2, Kenworthy **discloses** image data comprising object identification data (...the gsprite is divided into chunks by dividing the rectangular image region into chunks and associating these chunks with the gsprite data structure..col. 13, lines 52-55) and depth data (...Z is the component which represents the depth of the pixel...col. 34, lines 1-15).

Regarding claim 3, Kenworthy **discloses** the steps of compressing the image data prior to step d and decompressing the compressed image data prior to step g (col. 18, lines 28-45; col. 19, lines 15-30).

d. Regarding claim 4, it is similar in scope to claim 1 and is rejected under the same rationale.

e. Regarding claim 5, it is similar in scope to claim 2 and is rejected under the same rationale.

f. Regarding claim 6, it is similar in scope to claim 3 and is rejected under the same rationale.

g. Regarding claim 7, the claim limitation recites frame store means for storing the shading data for tiled data. Kenworthy **discloses** a chunking architecture being well-suited for image sub-division, it further **suggests** similar technique being equally

Art Unit: 2676

applicable to a full frame buffer being decomposed into smaller regions to reduce fragment memory requirement, and as such it would have been obvious to a person of ordinary skill in the art at the time invention was made to use similar arrangement for a frame store means as recited by the claim 7 limitation for the reasons cited above (col. 38, lines 15-25).

h. Regarding claim 8, wherein the claim limitation states releasing blocks of storage for further object data, Kenworthy **discloses** such an arrangement (col. 33, lines 51-60).

i. Regarding claim 9, Kenworthy **implicitly discloses** image data comprising a sequence of frames of data (col. 4, lines 21-41).

j. Regarding claim 10, it is similar in scope to claim 7 and is rejected under the same rationale.

k. Regarding claim(s) 11-13, they are similar in scope to claim 8 above and are rejected under the same rationale.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Dalip K. Singh** whose telephone number is (703) 305-3895.

The examiner can normally be reached on Mon-Thu (8:00AM-6: 30PM) Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Matthew Bella**, can be reached at (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Art Unit: 2676

Washington, D.C. 20231

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the Technology Center 2600 Customer Service Office
whose telephone number is (703) 306-0377.

dks

February 2, 2005

A handwritten signature in black ink, appearing to read "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" being more prominent than the last name "Bella".

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600